REMARKS

Claims 1-27 were pending in this application. No claims have been added or canceled. Hence, Claims 1-27 remain pending in this application.

A. SUMMARY OF AMENDMENTS

Claims 1 and 18 were amended to clarify that the plurality of mobile reports are received from mobile terminals located within a border area of the cell, and that a speech quality value is determined for a portion of the cell along the border area. Support for the amendments may be found throughout the Specification in general, and at least at page 13, lines 8-21.

A marked-up version showing changes to the claims is attached herewith in Appendix A. No new matter has been added.

B. ALLOWABLE SUBJECT MATTER

Applicants kindly thank the Examiner for the indication of allowable subject matter in Claims 12-17. Claims 3, 5, 10, 20, 22, and 26 were objected to, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims.

C. REJECTION OF THE CLAIMS UNDER 35 U.S.C. 103(a)

Claims 1, 2, 4, 6-9, 11, 18, 19, 21, 23-25 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kanai (5,898,682) in view of Kojima et al. (5,323,446). In making the rejection, the Examiner states the following:

> Claim 1. Kanai teaches a method for improving speech quality in a cellular communications network, said method comprising the steps of:
>
> selecting a cell from a plurality of cells forming the cellular communications network (col. 3, lines 55-65);
>
> evaluating a first plurality of mobile reports received from mobile terminals located within a predetermined distance to a border of non-cosited cell (col. 8, lines 49-56);
>
> determining, in response to evaluating a first plurality of mobile reports, a speech quality value within a portion of the cell (col. 8, line 66 to col. 9, line 5);
>
> Kanai discloses means for decreasing or increasing the portion of the cell (col. 8, lines 21-26). Kanai does not specifically mention comparing the

> communication quality to a predetermined lower or upper threshold values to decrease or increase the portion of the cell. However, Kojima teaches for evaluating signal quality and comparing with a prescribed threshold value. Therefore, it would have been obvious to one of ordinary skill in the art to modify Kanai by Kojima, by adding means for comparing evaluated transmission quality with a prescribed threshold values in order to optimize communications reliability by providing seamless handoff.

To the extent the rejection may be applied to the claims as amended, this rejection is respectfully traversed.

D. REASONS THE CLAIMS ARE PATENTABLE

As an initial matter, Applicants kindly thank the Examiner for the courtesy of a telephonic interview on November 15, 2001.

The present invention, as recited in independent Claim 1, is directed to a method of improving the speech quality in a cellular communications network. The method includes the steps of selecting a cell and evaluating a plurality of mobile reports received from mobile terminals in the cell. The particular mobile terminals that send the reports are **located within a border area of the cell**. A speech quality value is then determined for a **portion** of the cell **along the border area** based on the plurality of mobile reports. The portion of the cell is thereafter increased or decreased based on the speech quality value.

Independent Claim 18 is directed to a cellular communications network and recites similar limitations.

Applicants respectfully submit that neither Kanai nor Kojima et al. (nor any other art of record) discloses or suggests the claimed invention. Kanai appears to be directed merely to a technique of modifying a cell size to control the traffic level in the cell. (See, e.g., col. 8, lines 21-26.) Nowhere does Kanai disclose of suggest using mobile reports specifically from mobile terminals within a border area of the cell to determine the speech quality in a portion of the cell. Indeed, Kanai may be considered to teach away from the claimed invention in that Kanai appears to use mobile reports from all the mobile terminals in the cell to determine the speech quality in the entire cell. For example, Kanai teaches that the cell size is reduced when the traffic handling amount

(capacity) of the base station approaches the allowable limit. (See, e.g., col. 8, line 66 to col. 9, line 5; and col. 9, lines 55-60.) However, in order to establish that the traffic handling amount of the base station is approaching the allowable limit, Kanai would have to use mobile reports from all the mobile terminals.

Kojima et al. also fails to disclose or suggest using mobile reports specifically from mobile terminals within a border area of the cell to determine the speech quality in a portion of the cell. Therefore, even assuming *arguendo* that there is motivation to combine Kanai with Kojima et al, and that the two references may be combined in some meaningful manner, the combination would not produce the claimed invention.

Accordingly, because neither Kanai nor Kojima et al. (nor any other art of record), taken alone or in combination, teaches or suggests the claimed invention, withdrawal of the rejection against independent Claims 1 and 18 is respectfully requested.

As for dependent Claims 2-11 and 19-27, although these claims recite independently allowable subject matter, they depend from Claims 1 and 18, respectively, and are therefore allowable for at least the same reasons. Accordingly, withdrawal of the rejection against the dependent claims is also respectfully requested.

CONCLUSION

Applicants submit the claims are now in condition for allowance, which action is respectfully requested. If any questions or issues remain and the resolution of which the Examiner feels may be advanced by a conference with the Applicants' attorney, the Examiner is invited to contact the attorney at the telephone number indicated below.

The Assistant Commissioner is hereby authorized to charge any additional fees required for this submission to Deposit Account 10-0447, reference 34648-415USPT(DGN).

Respectfully submitted,

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APPENDIX A

VERSION SHOWING MARKED-UP CHANGES TO THE CLAIMS

1. (Twice Amended) A method for improving speech quality in a cellular communications network, said method comprising the steps of:

selecting a cell from a plurality of cells forming the cellular communications network;

evaluating a first plurality of mobile reports received from mobile terminals located within [a predetermined distance to] a border area of [a non-cosited] the cell;

determining, in response to evaluating the first plurality of mobile reports, a speech quality value within a portion of the cell along the border area; and

decreasing the portion of the cell when a lower threshold exceeds the speech quality value; or

increasing the portion of the cell when the speech quality value exceeds an upper threshold.

2. The method of Claim 1, wherein said step of decreasing the portion of the cell further includes adjusting at least one border offset parameter to reduce a size of the portion of the cell.

3. The method of Claim 1, wherein said step of decreasing the portion of the cell further includes adjusting a hierarchical cell structure threshold value of the cell to increase handovers of ongoing calls to another cell in a different layer of the cellular communications network.

4. The method of Claim 1, wherein said step of increasing the portion of the cell further includes adjusting at least one border offset parameter to increase a size of the portion of the cell.

5. The method of Claim 1, wherein said step of increasing the portion of the cell further includes adjusting a hierarchical cell structure threshold value of the cell to decrease handovers of ongoing calls to another cell in a different layer of the cellular communications network.

6. The method of Claim 1, wherein said portion of the cell further includes a cell border area or a section of the cell border area.

7. The method of Claim 1, further comprising the steps of:

determining an interfering cell from the plurality of cells, said interfering cell causes interference within said cell;

evaluating a second plurality of mobile reports; and

decreasing a portion of the interfering cell to improve the speech quality value in the cell.

8. The method of Claim 7, wherein said step of decreasing a portion of the interfering cell further includes adjusting at least one border offset parameter to reduce a size of the portion of the interfering cell, said portion of the interfering cell includes a cell border area or a section of the cell border area.

9. The method of Claim 8, wherein said step of adjusting at least one border offset parameter further includes determining a strongest neighbor cell adjacent to the section of the interfering cell to be reduced in size.

10. The method of Claim 7, wherein said step of decreasing a portion of the interfering cell further includes adjusting a hierarchical cell structure threshold value of the interfering cell to increase handovers of ongoing calls to another cell in a different layer of the cellular communications network, said portion of the interfering cell includes a cell border area or a section of the cell border area.

11. The method of Claim 1, further comprising the steps of:

determining an interfering cell from the plurality of cells, said interfering cell causes interference within said cell; and

allocating a channel during a call setup or handover on a Broadcast Control Channel frequency used within the interfering cell to improve the speech quality value in the cell.

12. (Amended) A method for improving speech quality in a cellular communications network, said method comprising the steps of:

selecting a cell from a plurality of cells forming the cellular communications network;

receiving a first plurality of mobile reports from a first transceiver located in the cell and from a corresponding number of first mobile terminals located in a portion of the cell and within a predetermined distance from a border of a non-cosited cell, said portion of the cell including a cell border area or a section of the cell border area;

determining, in response to receiving the first plurality of mobile reports, an average speech quality value of the portion of the cell;

dynamically changing the portion of the cell by decreasing the portion when a lower threshold exceeds the average speech quality value, and increasing the portion when the average speech quality value exceeds an upper threshold;

determining an interfering cell from the plurality of cells, said interfering cell causes interference within said cell;

receiving a second plurality of mobile reports from a second transceiver located in the interfering cell and from a corresponding number of second mobile terminals located in the interfering cell; and

decreasing a portion of the interfering cell to improve the average speech quality value in the cell, said portion of the interfering cell including a cell border area or a section of the cell border area.

13. The method of Claim 12, wherein said step of decreasing the portion of the cell further includes adjusting at least one border offset parameter to reduce a size of the portion of the cell, or adjusting a hierarchical cell structure threshold value of the cell to increase handovers of ongoing calls to another cell in a different layer of the cellular communications network.

14. The method of Claim 12, wherein said step of increasing the portion of the cell further includes adjusting at least one border offset parameter to increase a size of the portion of the cell, or adjusting a hierarchical cell structure threshold value of the cell to decrease handovers of ongoing calls to another cell in a different layer of the cellular communications network.

15. The method of Claim 12, wherein each of the first plurality of mobile reports further includes a plurality of downlink signal strengths and a downlink speech quality value determined at one of the first plurality of mobile terminals, and an uplink signal strength and an uplink speech quality value determined at the first transceiver.

16. The method of Claim 12, wherein said step of decreasing a portion of the interfering cell further includes adjusting at least one border offset parameter to reduce a size of the portion of the interfering cell, or adjusting a hierarchical cell structure threshold value of the interfering cell to increase handovers of ongoing calls to another cell in the different layer of the cellular communications network.

17. The method of Claim 16, wherein said step of adjusting at least one border offset parameter further includes determining a strongest neighbor cell adjacent to the section of the interfering cell to be reduced in size.

18. (Twice Amended) A cellular communications network comprising:

a cell;

a first transceiver station located within the cell;

a first plurality of mobile terminals located in a portion of said cell and within [a predetermined distance to] a border area of [a non-cosited] the cell, said portion includes [a] the cell border area or a section of the cell border area; and

a controller for receiving a first plurality of mobile reports, said controller further including:

means for determining an average speech quality value of the portion of the cell along the border area in response to receiving the first plurality of mobile reports; and

means for decreasing the portion of the cell when a lower threshold exceeds the average speech quality value; or

means for increasing the portion of the cell when the average speech quality value exceeds an upper threshold.

19. The cellular communications network of Claim 18, wherein said means for decreasing the portion of the cell further includes means for adjusting at least one border offset parameter to reduce a size of the portion of the cell.

20. The cellular communications network of Claim 18, wherein said means for decreasing the portion of the cell further includes means for adjusting a hierarchical cell structure threshold value of the cell to increase handovers of ongoing calls to another cell in a different layer of the cellular communications network.

21. The cellular communications network of Claim 18, wherein said means for increasing the portion of the cell further includes means for adjusting at least one border offset parameter to increase a size of the portion of the cell.

22. The cellular communications network of Claim 18, wherein said means for increasing the portion of the cell further includes means for adjusting a hierarchical cell structure threshold value of the cell to decrease handovers of ongoing calls to another cell in a different layer of the cellular communications network.

23. The cellular communications network of Claim 18, further comprising:

an interfering cell that causes interference within said cell;

a second transceiver station located within the interfering cell;

a second plurality of mobile terminals located within the interfering cell; and

said controller for receiving a second plurality of mobile reports, said controller further includes means for decreasing a portion of the interfering cell to improve the average speech quality value in the cell, said portion of the interfering cell includes a cell border area or a section of the cell border area.

24. The cellular communications network of Claim 23, wherein said means for decreasing the portion of the interfering cell further includes means for adjusting at least one border offset parameter to reduce a size of the portion of the interfering cell.

25. The cellular communications network of Claim 24, wherein said means for adjusting at least one border offset parameter further includes means for determining a strongest neighbor cell adjacent to the section of the interfering cell to be reduced in size.

26. The cellular communications network of Claim 23, wherein said means for decreasing the portion of the interfering cell further includes means for adjusting a hierarchical cell structure threshold value of the interfering cell to increase handovers of ongoing calls to another cell in a different layer of the cellular communications network.

27. The cellular communications network of Claim 18, further comprising an interfering cell that causes interference within said cell, said controller further includes means for allocating a channel during a call setup or handover on a Broadcast Control Channel frequency used within the interfering cell to improve the average speech quality value in the cell.